



Lab Objectives:

1-Networks 192.168.10.0/30, 192.168.17.0 and 172.20.20.0/30 should not be advertised in OSPF domain.

```
R1#sho run
router ospf 100
 log-adjacency-changes
 redistribute rip subnets route-map RIP-TO-OSPF
!
access-list 10 permit 192.168.10.0 0.0.0.3
access-list 10 permit 192.168.17.0 0.0.0.255
```

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```
access-list 10 permit 172.20.20.0 0.0.0.3
!  
route-map RIP-TO-OSPF deny 10  
  match ip address 10  
!  
route-map RIP-TO-OSPF permit 20  
  set metric 5000  
  set metric-type type-2  
R3# the same configuration
```

```
R5#sho ip route  
Gateway of last resort is not set  
C    192.168.30.0/24 is directly connected, Loopback0  
    172.16.0.0/30 is subnetted, 3 subnets  
O    172.16.40.0 [110/129] via 172.16.30.1, 00:12:45, Serial0/0  
C    172.16.30.0 is directly connected, Serial0/0  
O    172.16.10.0 [110/65] via 172.16.30.1, 00:12:45, Serial0/0  
O    192.168.20.0/24 [110/130] via 172.16.30.1, 00:12:45, Serial0/0  
    10.0.0.0/30 is subnetted, 1 subnets  
O E2  10.10.10.0 [110/5000] via 172.16.30.1, 00:07:19, Serial0/0  
O E2  192.168.16.0/24 [110/5000] via 172.16.30.1, 00:07:19, Serial0/0  
O E2  192.168.18.0/24 [110/5000] via 172.16.30.1, 00:07:19, Serial0/0
```

```
R6#sho ip route  
Gateway of last resort is not set  
O    192.168.30.0/24 [110/130] via 172.16.40.1, 00:08:12, Serial0/1  
    172.16.0.0/30 is subnetted, 3 subnets  
C    172.16.40.0 is directly connected, Serial0/1  
O    172.16.30.0 [110/129] via 172.16.40.1, 00:08:12, Serial0/1  
O    172.16.10.0 [110/65] via 172.16.40.1, 00:08:12, Serial0/1  
C    192.168.20.0/24 is directly connected, Loopback0  
    10.0.0.0/30 is subnetted, 1 subnets  
O E2  10.10.10.0 [110/5000] via 172.16.40.1, 00:02:46, Serial0/1  
O E2  192.168.16.0/24 [110/5000] via 172.16.40.1, 00:02:46, Serial0/1  
O E2  192.168.18.0/24 [110/5000] via 172.16.40.1, 00:02:46, Serial0/1
```

2-R3 should use RIP to reach 10.10.10.0/30, no route-maps, distribute-lists or prefix-lists should be used.

```
R3(config)#router ospf 100  
R3(config-router)#distance ospf external 100 inter-area 100 intra-area  
100  
R3(config-router)#distance 100 10.10.10.0 0.0.0.3  
  
R3(config-router)#do sho ip route  
    10.0.0.0/30 is subnetted, 1 subnets  
R    10.10.10.0 [120/1] via 172.20.20.1, 00:00:11, Serial1/0
```

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3-192.168.16.0/24 should be advertised in ospf with metric of 200 and metric type of 1.

```
R1#sho run
!
access-list 10 permit 192.168.10.0 0.0.0.3
access-list 10 permit 192.168.17.0 0.0.0.255
access-list 10 permit 172.20.20.0 0.0.0.3
access-list 20 permit 192.168.16.0 0.0.0.255
!
route-map RIP-TO-OSPF deny 10
  match ip address 10
!
route-map RIP-TO-OSPF permit 15
  match ip address 20
  set metric 200
  set metric-type type-1
!
route-map RIP-TO-OSPF permit 20
  set metric 5000
  set metric-type type-2
```

R3# the same configuration

```
R3#sho ip route
O E1 192.168.16.0/24 [100/201] via 172.16.10.1, 00:04:18, FastEthernet0/0
```

```
R5#sho ip route
O E1 192.168.16.0/24 [110/264] via 172.16.30.1, 00:04:21, Serial0/0
```

```
R6#sho ip route
O E1 192.168.16.0/24 [110/265] via 172.16.40.1, 00:03:55, Serial0/1
```

4-Any other route redistributed in ospf should be redistributed with a metric of 5000 and type 2.

Included in question 2

5-Without redistributing ospf routes back into RIP, RIP domain routers should be able to reach any network in the ospf domain.

```
R1#sho run | sec rip
  redistribute rip subnets route-map RIP-TO-OSPF
router rip
  version 2
  passive-interface FastEthernet1/0
  network 192.168.10.0
  default-information originate
```

```
R3#sho run | sec rip
  redistribute rip subnets route-map RIP-TO-OSPF
router rip
  version 2
  passive-interface FastEthernet0/0
  network 172.20.0.0
  default-information originate
  no auto-summary
```

```
R2#sho ip route
R* 0.0.0.0/0 [120/1] via 192.168.10.1, 00:00:20, FastEthernet0/0
```

```
R4#sho ip route
R* 0.0.0.0/0 [120/1] via 172.20.20.2, 00:00:25, Serial1/0
```